

DETAILED ACTION

Response to Arguments

1. The amendments and arguments presented by the applicant have been considered and are persuasive. In view of such, the previous rejections in the first office action have been withdrawn. However, an update search and further review of the prior art of record has prompted the presentation of new rejections presented below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1, 3, 4, 5, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beatenbough (U.S. Patent Number 5,778,689) in view of Mita (JP 04118547).

In regard to claim 1, Beatenbough teaches a cold-storage/freezer space A comprising at least one door B with at least two transparent sheets 14 and 14' (Fig.2), a conductive layer 18 (C2, L67- C3, L2) being placed on one of the sheets 14' to function as a heating element to keep

said sheets free of condensation, the system comprising a moisture sensor 46 and a temperature sensor 40 on the side which is warm when using the cold-storage/freezer space (Fig.1), the sensors 40 and 46 being connected to a control unit C, the control unit regulating the supply of power to the conductive layer (Abstract discloses that the control unit provides power supply for the conductive layer). However, Beatenbough does not disclose that the system also comprises a second temperature sensor in the cold-storage/freezer space or that the second temperature sensor being connected to the control unit. Mita teaches having a second temperature sensor 5 to sense the temperature inside the storage space in addition to a first temperature sensor 3 and a humidity sensor 4 for ambient temperature and humidity in order to achieve better humidity measurement. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Beatenbough's invention to include a second temperature sensor located inside the storage space as taught by Mita in order to have better measurement of the humidity and to achieve better control of moisture removal.

In regard to claim 3, Beatenbough teaches that the control unit C is a separate unit arranged separately from the door B (see Figure. 1).

In regard to claim 4, Beatenbough teaches in Abstract that the control unit C maintains the temperature of the sheets at a temperature range that maintains the sheets free of condensation and further teaches in col. 4, lines 7-11 that the temperature to be maintained is no less than 2° above the dew point temperature.

In regard to claim 5, the combined system of Beatenbough discloses in col. 3, line 59-col. 4, line 6 adjusting the controller to maintain a maximum and minimum dew point levels and it would have been obvious to a person of ordinary skill in the art at the time of the invention to

modify the combined system of Beatenbough and Mita to program the control unit C with an experience curve in order to determine the dew point (e.g.; Shima et al. (U.S. Patent Number 6,550,261)).

In regard to claim 7, the combined invention of Beatenbough/Mita does not teach that the second temperature sensor is located in an upper part of the door frame. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to re-arrange the second temperature sensor of the combined system of Beatenbough and Mita to be placed in an upper part of the door frame since it is well known in the art the upper part of the doorframe is the location most often to have moisture condensation.

In regard to claim 10, Beatenbough teaches in col. 3, lines 1-2 that the transparent sheet 14' is a sheet of glass.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beatenbough, in view of Mita and further in view Millett et al. (U.S. Patent Number 6,144,017).

The combined system of Beatenbough and Mita does not teach that the control unit C is arranged in the doorframe. Millett et al. teaches in Fig. 2 having a control unit 30 arranged in a doorframe 32 of a freezer door 26. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combined system of Beatenbough and Mita to have the controller C arranged in the doorframe as taught by Millett et al. since arranging the controller within the system requires only a routine skill in the art and re-arranging the controller location will not affect the system performance.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beatenbough, in view of Mita and further in view Midlang (U.S. Patent Number 4,938,027).

The combined system of Beatenbough and Mita does not teach having a plug interface that is connected to the control unit to allow reprogramming. Midlang teaches a plug interface 222 (called EEPROM) (see Figure. 4) attached to electronic control 202 (see Figure 4) of a refrigerator, the EEPROM is normally used to receive data and reprogram different aspects of the control unit 202. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combined system of Beatenbough and Mita to include a plug interface as taught by Midlang in order to control the different aspects of the control unit C and further adjust the different control parameters of the system which helps in controlling the system more efficiently and flexible.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beatenbough, in view of Mita and further in view of Bos (U.S. Patent Number 4,411,139).

Beatenbough teaches in col. 4, lines 43-53 providing display units to visually monitor the operating status of the system, but does not disclose that the display units are made of light emitting diodes. Bos teaches in Fig. 1 having a plurality of light emitting diode devices for the indicators from 1-16 to indicate the operational status of the system (col. 3, lines 26-34). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combined system of Beatenbough and Mita to include light emitting diodes indicators as taught by Bos in order to indicate the operational status of the system in order to achieve a simple and quick way of monitoring the system status which helps quickly and efficiently control the system various functions.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beatenbough, in view of Mita and further in view of Heaney (U.S. Patent Number 4,127,765).

The combined system of Beatenbough and Mita does not teach having a change-over switch that is connected to allow use of the same system for different type of doors and operating conditions. Heaney teaches in the Abstract that a change over switch 20 (disclosed as a switching means in the Abstract) that allows the system to be used with different operating conditions (Abstract discloses series and parallel door connections). This cuts inventory requirements substantially and permits the doors, when installed, to be altered electrically to cope with widely varying ambient conditions (C-5, L-54-55). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combined system of Beatenbough and Mita to include a change-over switch as taught by Heaney in order to make the storage system more adaptable to different operating conditions and different installation requirements which saves on parts and installation of the system.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (571) 272-4809. The examiner can normally be reached on Monday-Thursday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chen-Wen Jiang/
Primary Examiner, Art Unit 3744